

REMARKS:

- 1) Referring to item 10) of the Office Action Summary, please indicate the acceptance of the drawings filed on July 12, 2006.
- 2) Referring to item 12) of the Office Action Summary, please x-mark box 12), to clearly indicate the acknowledgment of the claim for foreign priority.
- 3) In accordance with the PCT procedures, the original specification of this application was a direct literal translation of the foreign language text of the corresponding PCT International Application. The translated specification has now been amended in an editorial and formal manner, to better comply with typical US Application format (e.g. with section headings, without reference to specific claim numbers in the description, and with proper form and content of the abstract). Also, a few minor editorial corrections have been made. These amendments do not introduce any new matter. Entry thereof is respectfully requested.
- 4) Further according to the PCT procedures, the original claims of this application were a direct literal translation of the foreign language claims of the corresponding PCT International Application. Claims 16, 18, 19 and 20 have now been amended with a few minor editorial clarifications to better conform to typical US claim practice, and to avoid certain aspects of a direct literal translation. An optional feature has been deleted from

4963/WFF:ks

- 9 -

claim 20, and instead presented in a new further dependent claim 21. These merely editorial amendments do not introduce any new matter, do not narrow the scope of the claims, and are presented merely for editorial reasons to adapt the translated PCT claims to US practice as mentioned above. Furthermore, claims 11 to 15 have been canceled. Entry and consideration of the claim amendments are respectfully requested.

- 5) Referring to section 2 on page 2 of the Office Action, the rejection of claims 11 to 15 as anticipated by US Patent 4,915,908 (Nagle et al.) has been obviated by the cancellation of those claims. Please withdraw the rejection.
- 6) Referring to section 4 on page 3 of the Office Action, the rejection of claims 16 to 20 as obvious over Nagle et al. in view of US Patent 5,400,505 (Wei et al.) is respectfully traversed.

As acknowledged by the Examiner, Nagle does not disclose that the fibers are coated. More importantly, the Nagle et al. reference discloses a production method that is significantly different from the presently claimed method. In the inventive method according to present claim 16, high tensile strength fibers are coated with titanium or a titanium based alloy and are then consolidated under pressure at elevated temperature to form the semifinished product of a composite material. More particularly, in connection with the step of coating the fibers with titanium or titanium based alloy, ceramic particles are embedded in the coating of the fibers, and then the thusly coated fibers are arranged in a desired geometry and consolidated to

form the semifinished product. It is thus an important feature of the present invention that the fibers are coated with titanium or a titanium based alloy, and in connection therewith additionally ceramic particles are embedded in the coating of the fibers. The Nagle et al. method does not involve such steps or features.

Contrary to the present invention, in the Nagle et al. method, the ceramic particles arise by precipitation in a molten matrix metal, particularly by introducing and mixing-in a powder of the ceramic components into a molten matrix metal bath (see col. 5 lines 32 to 68 and col. 6 lines 1 to 58). Such a process of mixing ceramic-forming powder into a molten metal bath to precipitate ceramic particles in the molten metal does not disclose and would not have suggested a process that involves coating fibers with titanium or a titanium based alloy, and in connection therewith additionally embedding ceramic particles in the coating, and finally consolidating the thusly coated fibers to form the semifinished product.

With regard to a process of coating fibers, e.g. by sputtering with a titanium based alloy, and then compacting the coated fibers to prepare a product, the Examiner has additionally cited the Wei et al. Patent. However, the Wei et al. method does not provide for embedding ceramic particles in the coating of the fibers in connection with the coating step.

Even if a person of ordinary skill in the art would have considered the Wei et al. disclosure with that of Nagle et al. as discussed above, there still would have been no suggestion or reason for embedding ceramic particles in a coating in connection

with the step of coating the fibers, there also would have been no enablement of how to achieve that. Namely, Wei et al. disclose coating fibers with titanium based alloy by sputtering, but do not disclose or suggest additionally embedding ceramic particles in the titanium-based coating or how that could be achieved. On the other hand, Nagle et al. disclose the precipitation of ceramic particles in a molten metal bath that can be titanium based, but do not disclose or suggest applying or coating the titanium based alloy onto fibers and embedding ceramic particles in the coating layer in connection with a step of coating the fibers. That would not even have been suggested in the context of Nagle et al., because the ceramic particles are formed by precipitation from ceramic-forming component powder mixed into a molten bath of the matrix metal. Such a molten metal bath does not suggest anything about embedding ceramic particles in a coating on fibers in connection with the coating step. So, while Wei et al. coat fibers, they do not provide embedded ceramic particles and do not teach how to achieve that. On the other hand, Nagle et al. disclose how to precipitate ceramic particles from a ceramic powder in a molten metal bath, but that cannot be directly utilized in connection with the step of coating fibers, because the precipitation occurs in a molten metal bath and not in a coating layer that is coated onto a fiber in connection with the step of coating the fiber. Also, the sputtering process of Wei et al. would not be applicable for the molten metal bath of Nagle et al.

For these reasons, the invention of present claim 16 would not have been obvious over Nagle et al. in view of Wei et al.

The dependent claims recite additional features that further distinguish the invention over the prior art, for example as follows.

Claim 17 recites that the step of coating the fibers with titanium or titanium based alloy is carried out under a reactive atmosphere. Nagle et al. are silent in this regard, because they do not have anything to do with a step of coating fibers. On the other hand, Wei et al. are directly contrary to the present invention, because they disclose to carry out the fiber coating step under a partial vacuum, presumably to avoid any reactions caused by the atmosphere gas. Contrary thereto, the inventive method of claim 17 purposely carries out the coating step under a reactive atmosphere, so that a reaction will take place and thereby form the ceramic particles in the coating layer during the coating step. In this regard, see the present specification at page 7 lines 1 to 21.

Claim 18 depends from claim 17 and further particularly recites that the reactive atmosphere is a nitrogen atmosphere, so that nitrogen atoms together with particles of titanium or titanium based alloy in the coating will form and deposit the ceramic particles into the coating. According to claim 19, which further depends from claim 18, the ceramic particles thus comprise particles of titanium nitrides that are deposited into the coating due to the reaction of the nitrogen reactive atmosphere and the titanium or titanium based alloy of the coating layer. Contrary to these claims, Wei et al. require the coating step to be carried out under a partial vacuum.

According to claim 20, the coating step is carried out as a physical vapor deposition (PVD) coating step. According to further dependent claim 21, the PVD coating step comprises sputtering. While Wei et al. disclose a sputtering step for coating a fiber, there is no suggestion that ceramic particles shall further be embedded in the coating material in connection with such a sputter-coating step. There is also no teaching or enablement of how to achieve that, especially because Wei et al. require the sputtering to be carried out under a partial vacuum.

For the above reasons, the inventive features of claims 16 to 20 are not disclosed and would not have been suggested by the prior art. The Examiner is respectfully requested to withdraw the obviousness rejection applying Nagle et al. in view of Wei et al.

- 7) Favorable reconsideration and allowance of the application, including all present claims 16 to 21, are respectfully requested.

Respectfully submitted,

WFF:ks/4963  
Enclosures:  
Transmittal Cover Sheet,  
Term Extension Request,  
Form PTO-2038

By Walter F. Fasse  
Walter F. Fasse  
Patent Attorney  
Reg. No.: 36132  
Tel. 207-862-4671  
Fax. 207-862-4681  
P.O. Box 726  
Hampden, ME 04444-0726

CERTIFICATE OF FAX TRANSMISSION:

I hereby certify that this correspondence with all indicated enclosures is being transmitted by telefax to (571) 273-8300 on the date indicated below, and is addressed to: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450.

Walter F. Fasse 1/20/09  
Name: Walter F. Fasse - Date: January 20, 2009

4963/WFF:ks

- 14 -